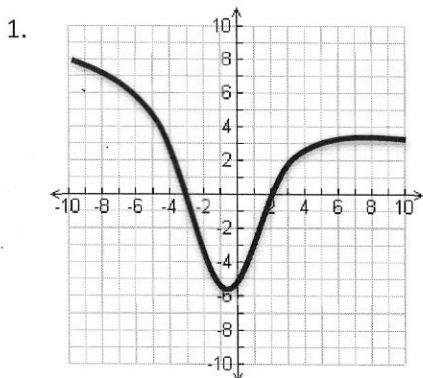
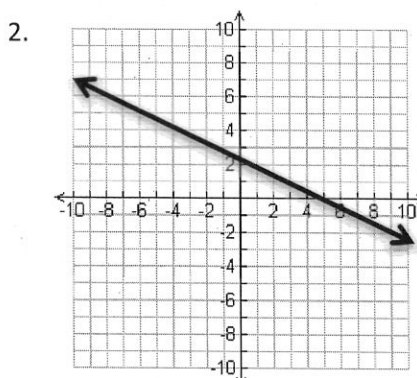


Ch 5 Part 1 Practice Test

Directions: Determine whether the following are functions, if they are functions determine if they are linear.



Function, Not Linear



Linear Function

3. $3x - 4y^2 = 5$

Exponent higher than 1 not linear.

No Function

4. $\frac{x}{3} = 4y + 1$

$$\left(\frac{1}{4}\right) \frac{x}{3} - 1 = 4y \left(\frac{1}{4}\right)$$

$$\frac{1}{12}x - \frac{1}{4} = y$$

$mx + b = y \rightarrow$ Linear function

Directions: Determine the x and y intercepts of the following:

5. $4x - 3y = 24$

y-int

$$4(0) - 3y = 24$$

$$-3y = 24$$

$$y = -8$$

$$(0, -8)$$

x-int

$$4x - 3(0) = 24$$

$$4x = 24$$

$$x = 6$$

$$(6, 0)$$

6. $y = \frac{1}{3}x - 2$

y-int
 $(0, -2)$

x-int $= (6, 0)$

$$0 = \frac{1}{3}x - 2$$

$$+2$$

$$+2$$

$$(3)2 = \frac{1}{3}x(3)$$

$$6 = x$$

7. $6x + 3y = -36$

y-int

$$6(0) + 3y = -36$$

$$3y = -36$$

$$y = -12$$

$$(0, -12)$$

x-int

$$6x + 3(0) = -36$$

$$6x = -36$$

$$x = -6$$

$$(-6, 0)$$

Ch 5 Part 1 Practice Test

8. What does it mean to have a slope of a line? (Do not just copy a definition out of a book)

A RATE OF CHANGE THAT EXPLAINS THE RELATIONSHIP B/W COORDINATES ON A LINE. FOUND BY THE RATIO OF $\frac{\Delta y}{\Delta x}$.

9. Describe what each variable in the following formula represents.

$$y = mx + b$$

x & $y \rightarrow$ coordinates on the line $m \rightarrow$ slope $b \rightarrow$ y-int

10. Describe what each variable in the following formula represents.

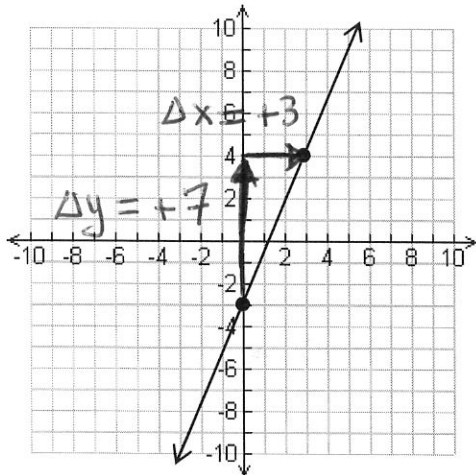
$$Ax + By = C$$

$A, B, \& C \rightarrow$ Real #'s

x & $y \rightarrow$ coordinates on the line

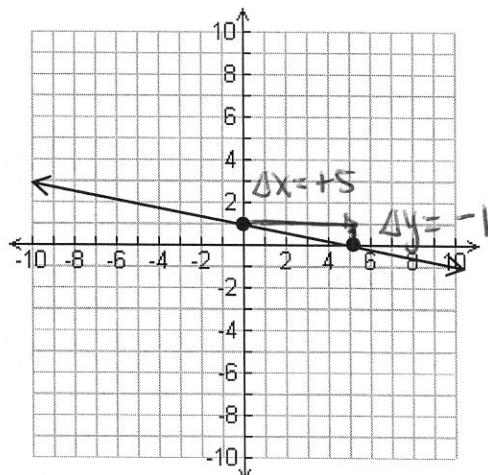
Directions: Determine the slope of a line given the following.

11.



Slope: $\frac{\Delta y}{\Delta x} = \frac{7}{3}$

12.



Slope: $\frac{\Delta y}{\Delta x} = \frac{-1}{5}$

13. $2x - y = 4$

$-2x \quad -2x$

$m = 2$

$-y = -2x + 4$

$y = 2x - 4$
 \uparrow
 $m \quad x + b$

15. $(4, 1), (9, -3)$

14. $y = \frac{1}{5}x - 2$

$m = \frac{\Delta y}{\Delta x} = \frac{1}{5}$

16. $(-7, -11), (-5, -15)$

$\Delta x \quad x \quad y \quad \Delta y$
5 $\begin{pmatrix} 4 & 1 \\ 9 & -3 \end{pmatrix} \begin{matrix} -4 \\ -4 \end{matrix}$ (OR) $m = \frac{-3 - 1}{9 - 4} = \frac{-4}{5}$
 $\frac{\Delta y}{\Delta x} = \frac{-4}{5}$

$\begin{matrix} x & y \\ -7 & -11 \\ -5 & -15 \end{matrix} \begin{matrix} -4 \\ -4 \end{matrix}$ OR $m = \frac{-15 - (-11)}{-5 - (-7)} = \frac{-4}{2} = -2$
 $\frac{\Delta y}{\Delta x} = \frac{-4}{2} = -2$
 $m = -2$

#17→20 FIRST FIND UNKNOWN CHANGE THEN CALCULATE THE UNKNOWN COORDINATE. Ch 5 Part 1 Practice Test

Directions: Determine the unknown variable from the given information.

17. $\frac{\Delta y}{\Delta x} = \frac{3}{5}$ (5, y), (-4, 10)

Δx	x	y	Δy
9	-4	10	?
5	y	?	?

$$\frac{\Delta y}{\Delta x} = \frac{3}{5}$$

$$(9) \frac{\Delta y}{9} = \frac{3}{5}(9)$$

$$\Delta y = 5.4$$

$$10 + 5.4 = y$$

$$\boxed{y = 15.4}$$

19. $\frac{\Delta y}{\Delta x} = \frac{6}{7}$ (3, 8), (5, y)

Δx	x	y	Δy
2	3	8	?
2	5	y	?

$$\frac{\Delta y}{\Delta x} = \frac{6}{7}$$

$$(2) \frac{\Delta y}{2} = \frac{6}{7}(2)$$

$$\Delta y = \frac{12}{7} = 1\frac{5}{7}$$

$$y = 8 + 1\frac{5}{7}$$

$$\boxed{y = 9\frac{5}{7}}$$

18. $m = \frac{-4}{3}$ (2, 1), (x, -15)

Δx	x	y	Δy
12	2	1	-16
x	x	-15	?

$$\frac{\Delta y}{\Delta x} = \frac{-4}{3}$$

$$\frac{-16}{\Delta x} = \frac{-4}{3}$$

$$\frac{-16}{-4} = \frac{-4}{-4}$$

$$4 = 1$$

$$\Delta x = 12$$

$$x = 2 + 12$$

$$\boxed{x = 14}$$

20. slope = 4 (5, 1), (x, 9)

Δx	x	y	Δy
2	5	1	8
x	x	9	?

$$\frac{\Delta y}{\Delta x} = 4$$

$$\frac{8}{\Delta x} = 4$$

$$\frac{8}{4} = 4$$

$$2 = 4$$

$$\Delta x = 2$$

$$x = 5 + 2$$

$$\boxed{x = 7}$$

Directions: Write the following Equations in Slope-Intercept form then graph the line only using the slope and intercept.

21. $3x + y = -1$

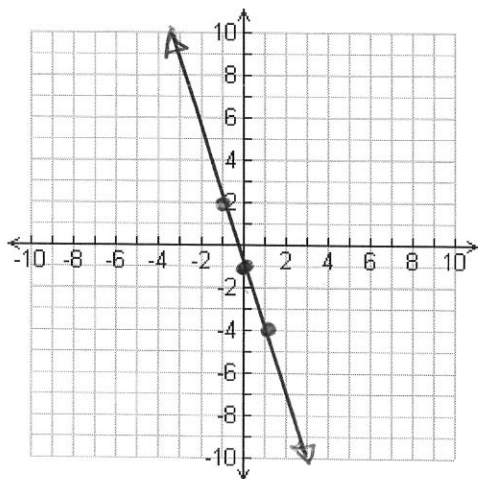
$$-3x \quad -3x$$

$$y = -3x - 1$$

$$y = mx + b$$

$$\frac{\Delta y}{\Delta x} = \frac{-3}{1}$$

$$y\text{-int} = (0, -1)$$



22. $5x - 2y = -4$

$$-5x \quad -5x$$

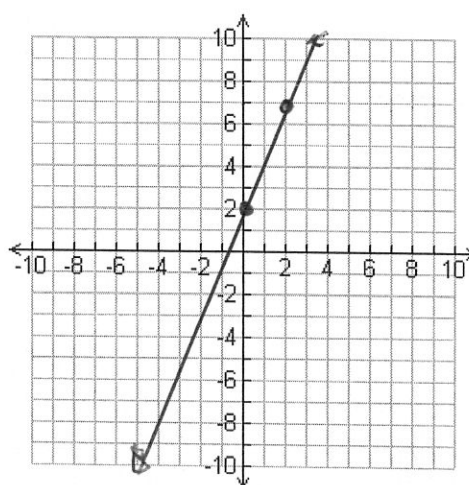
$$-2y = -5x - 4$$

$$\frac{-2y}{-2} = \frac{-5x}{-2} - \frac{4}{-2}$$

$$y = \frac{5}{2}x + 2$$

$$\frac{\Delta y}{\Delta x} = \frac{5}{2}$$

$$y\text{-int} = (0, 2)$$



Ch 5 Part 1 Practice Test

Directions: Graph the following using x and y intercepts.

plug zero in for x & y separately!

x-int 23. $-2x - 3y = 6$

$$-2x - 3(0) = 6$$

$$-2x = 6$$

$$x = -3$$

$$(-3, 0)$$

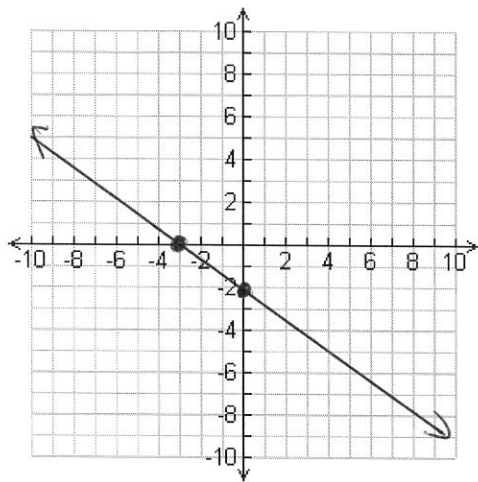
y-int

$$-2(0) - 3y = 6$$

$$-3y = 6$$

$$y = -2$$

$$(0, -2)$$



24. $y = \frac{4}{5}x - 8$

y-int

$$(0, -8)$$

x-int

$$0 = \frac{4}{5}x - 8$$

$$+ 8 \quad + 8$$

$$\left(\frac{5}{4}\right)8 = \frac{4}{5}x \left(\frac{5}{4}\right)$$

$$10 = x$$

$$(10, 0)$$

